

Nov. 9, 1943.

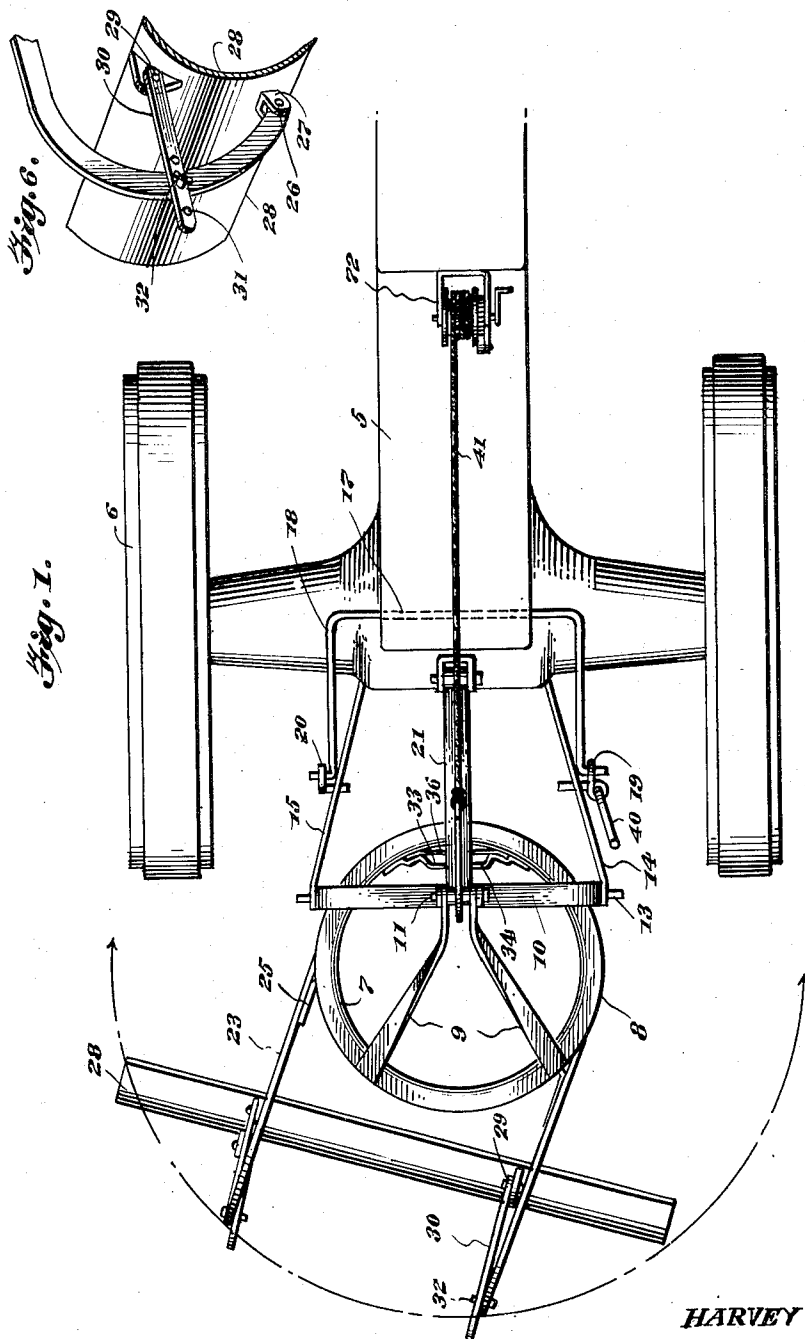
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2,333,837

ROAD SCRAPER

Filed May 8, 1942

2 Sheets-Sheet 1



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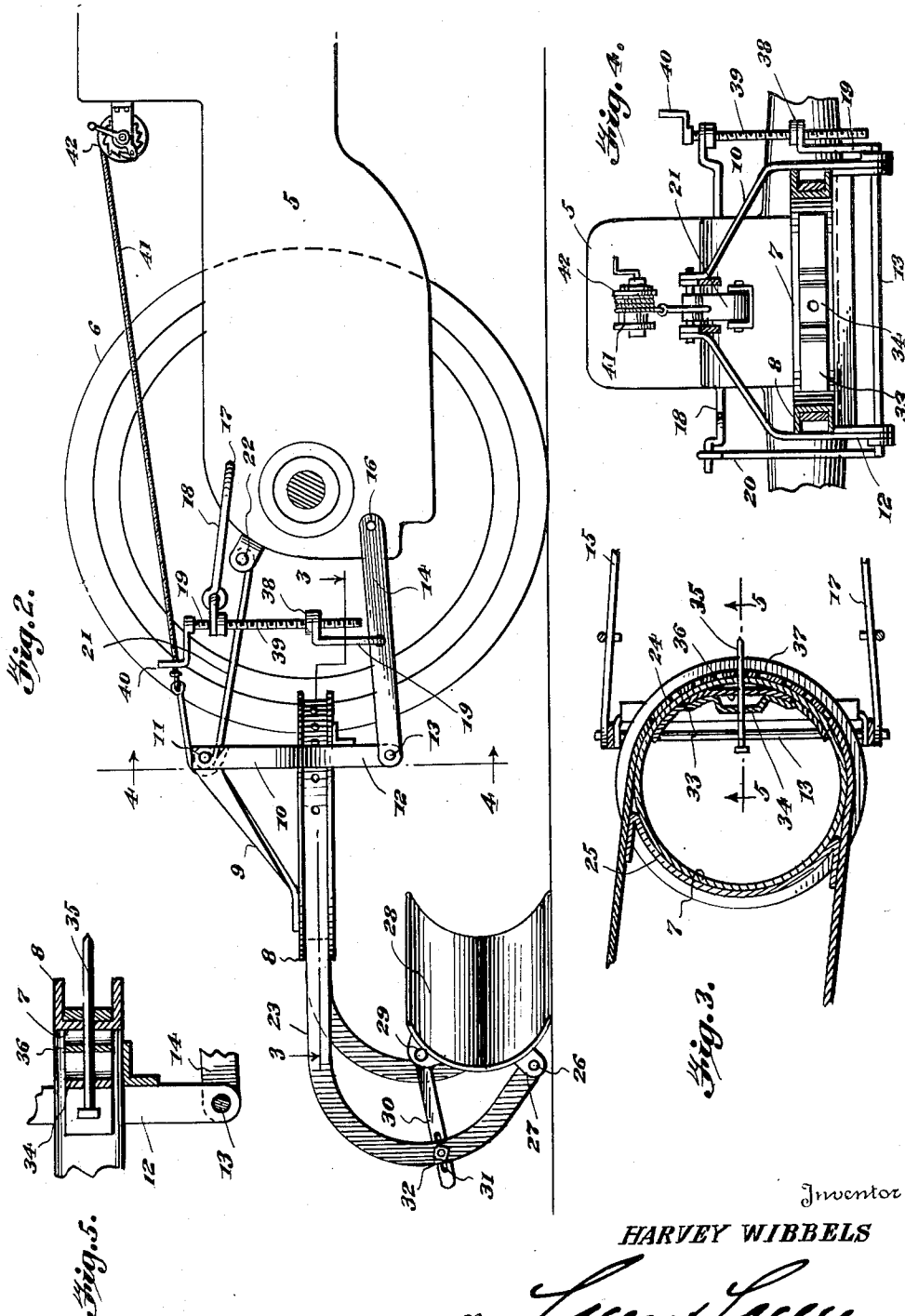
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2,333,837

ROAD SCRAPER

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Application May 8, 1942, Serial No. 442,255

5 Claims. (Cl. 37—156)

This invention relates to a road patrol or scraper and has for its object to provide a strong, durable and thoroughly efficient device of this character for scraping, grading and otherwise treating the surface of the roadbed or other surface upon which the machine is operating.

A further object of the invention is to provide a road scraper especially designed for attachment to a well known type of tractor equipped with an hydraulic system, the construction of the scraper being such as to permit quick angular adjustment of the scraping blade to conform to the requirements of different road conditions.

A further object of the invention is to provide a road patrol or scraper including a main supporting frame having one end thereof pivotally connected with a power tractor and its other end provided with a relatively stationary circular track on which the blade carrying frame is mounted for turning movement, means being provided for raising and lowering the main frame, together with the scraping blade, and means for securing said scraping blade in different positions of lateral adjustment with respect to the main frame.

A further object is to provide means whereby the scraping blade may be tilted in a vertical plane on the scraper carrying frame and securely held in a selected position of adjustment.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

In the accompanying drawings:

Figure 1 is a top plan view of a portion of a tractor provided with a road patrol or scraper embodying the present invention.

Figure 2 is a side elevation, the rear axle of the tractor being shown in section.

Figure 3 is a horizontal sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a vertical sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a detail transverse sectional view taken on the line 5—5 of Figure 3.

Figure 6 is a perspective view of one end of the scraping blade, showing the means for tilting the blade with respect to its supporting frame.

The improved road patrol or scraper forming the subject matter of the present invention is shown in connection with a well known type of tractor having a conventional hydraulic system, the details of construction of the tractor and hydraulic system being omitted for the sake of clearness.

In the drawings, 5 indicates the rear portion of the tractor and 6 the traction wheels between which is disposed the mechanism for mounting and adjusting the scraping blade. The device comprises an annular relatively stationary frame or track 7 having upper and lower outwardly extending guide flanges 8, the top of the track being reinforced and strengthened by upwardly converging rear bars 9 and inwardly converging side bars 10 through which extends a transverse bolt 11. The lower ends of the side bars 10 are welded or otherwise rigidly secured to the annular frame or track 7 and project slightly below the lower flange of said frame to form depending ears 12 through which extends a transverse connecting rod 13. The annular frame 7 is pivotally connected to the rear end of the tractor by means of spaced longitudinal bars 14 and 15 having their inner ends pivotally mounted at 16 to the adjacent end of the tractor 5 and their outer ends pivotally mounted on the connecting rod 13 so as to permit said frame to be raised and lowered at will. Disposed above the bars 14 and 15 and pivotally mounted at 17 on the body of the tractor is a substantially U-shaped yoke 18, the free ends of which are pivotally connected to the bars 14 and 15 by links 19 and 20. Pivotally mounted on the bolt 11 is a central longitudinal bar 21 having its inner end pivotally mounted at 22 on the tractor between the arms of the yoke 18.

Arranged at the rear of the annular frame 7 is a scraper carrying frame 23 having its forward end portion bent in semi-circular form, as indicated at 24, to conform to the shape of the annular track 7, said semi-circular portion 24 being slidably mounted on the track between the guide flanges 8 so as to permit lateral adjustment of the frame with respect to the tractor. The scraper carrying frame 23 comprises spaced arms having their connected ends welded or otherwise united by an arcuate bar 25 which bears against the annular track 7 at the rear thereof and serves to assist in preventing accidental displacement of the parts. The arms comprising the frame 23 are curved downwardly and forwardly and pivotally connected at 26 to outstanding lugs 27 formed on the scraper blade indicated at 28. The scraper blade is preferably concavo-convex in cross section, and pivotally mounted at 29 on lugs extending from the convex face of the scraper, in spaced relation to the lugs 27, are adjusting links 30 having a plurality of openings 31 formed therein and through which extend securing bolts 32 for holding the blade in different positions of

vertical angular adjustment. Disposed within the annular frame 7, at the forward portion thereof, is a brace 33 having its intermediate portion offset at 34 and provided with a central perforation for the reception of a locking pin 35. The pin 35 extends through an arcuate reinforcing plate 36, interposed between the brace 33 and track 7, for engagement with any one of a series of openings 37 formed in the curved portion 24 of the blade carrying frame 23. It will thus be seen that by removing the pin 35, the blade carrying frame 23 may be adjusted laterally to either side of the longitudinal axis of the tractor and said frame held in adjusted position by means of the locking pin 35. It will also be noted that the vertical angular adjustment of the blade 28 may be changed as will by the links 30 and fastening bolts 32.

The link 19 is preferably formed in two sections, the lower one of which is provided with a threaded boss 38 adapted to receive threads 39 on the upper section, the latter being provided with a crank 40, by rotating which one side of the blade carrying frame 23 may be elevated so as to permit the working edge of the scraper to conform to the crown of a roadbed. The scraper blade assembly may be raised and lowered by the conventional hydraulic system previously referred to but, for the sake of clearness, there is shown a cable 41, one end of which is provided with a hook fitting over the bolt 11 while the other end is connected with a hand operated winch 42. As previously stated, however, the scraper assembly may be raised and lowered by a hydraulic system or by any other means, if desired. It will, of course, be understood that the joints and adjacent members are sufficiently flexible to permit transverse tilting of the frame without undue binding of the parts.

It will, therefore, be seen that the structure herein shown and described is so constructed that the blade assembly may be raised and lowered either to conform to inequalities in surface material of a roadbed or to permit turning of the tractor and that the scraper blade may be shifted either to the right or to the left, and said scraper blade angularly adjusted in a vertical plane to conform to the requirements of different road conditions.

From the foregoing description, it is thought that the construction and operation of the device will be readily understood by those skilled in the art and further description thereof is deemed unnecessary.

It will be understood, however, that the machine may be made in different sizes and shapes and used in connection with any type of tractor without departing from the spirit of the invention.

Having thus described the invention, what is claimed is:

1. The combination with a tractor, of a scraper assembly including a relatively stationary annular frame having a perforation formed therein and provided with upper and lower guide flanges, means for pivotally supporting the stationary frame on the tractor, a perforated movable frame mounted for turning movement between the guide flanges of the annular frame, a brace secured to the inner face of the annular frame and having an intermediate offset portion provided with a perforation, a scraping blade carried by the movable frame, a locking pin extending through the perforations in the intermediate offset portion and annular frame and engaging the

adjacent perforations in the movable frame for locking said movable frame in different positions of lateral adjustment, and means for raising and lowering the scraper assembly.

2. The combination with a tractor, of a scraper assembly including a relatively stationary annular frame provided with spaced guide flanges and having a perforation formed therein, upwardly converging top bars secured to the annular frame, converging side bars secured to said frame and intersecting the upwardly converging bars, a bolt connecting the upper ends of said bars, the lower portions of the side bars being extended below the annular frame, longitudinal bars forming a pivotal connection between the lower ends of the side bars and said tractor, a movable frame mounted for turning movement between the flanges of said annular frame and provided with a scraping blade, said movable frame being formed with a series of perforations, a brace secured to the inner portion of the annular frame and provided with a perforation, a locking pin extending through said perforation for selective engagement with one of the perforations in the movable frame for holding said movable frame in different positions of adjustment, a bar forming a pivotal connection between the tractor and said bolt, and means for raising and lowering the scraper assembly.

3. The combination with a tractor, of a scraper assembly including a relatively stationary annular frame, intersecting side and top bars secured to said frame, a bolt extending through said bars at the intersection thereof, longitudinal bars forming a pivotal connection between the lower ends of the side bars and the tractor, a bar having one end thereof pivotally mounted on said bolt and its other end connected with the tractor frame, a movable frame mounted for turning movement on said annular frame and provided with a scraping blade, a yoke pivotally mounted on the tractor, links forming a pivotal connection between said yoke and longitudinal bars, one of said links including upper and lower interengaging threaded portions, and means for adjusting said threaded portions vertically of the tractor.

4. The combination with a tractor, of a scraper assembly including a relatively stationary perforated annular frame pivotally connected with the tractor and provided with upper and lower guide flanges, a brace secured to the inner face of the annular frame having its intermediate portion offset and formed with a perforation, a reinforcing bar interposed between the offset portion and said annular frame, a movable frame having its forward portion conforming to the shape of the annular frame and mounted for turning movement thereon between said guide flanges and its rear portion provided with downwardly and forwardly extending terminals, a scraping blade pivotally mounted on said terminals for angular adjustment with respect thereto, an arcuate plate secured to the rear portion of the movable frame and bearing against the annular frame, a locking pin extending through the perforation in the brace and through the reinforcing plate and engaging in the adjacent opening in the movable frame for locking said frame in different positions of lateral adjustment with respect to the tractor, and means for raising and lowering the scraper assembly.

5. The combination with a tractor, of a scraper assembly including a relatively stationary annular frame provided with upper and lower guide flanges, converging rear bars secured to the an-

nular frame, converging side bars intersecting the rear bars and having their lower ends secured to the annular frame and depending below the same, a bolt extending through said bars at the intersection thereof, a longitudinal bar forming a pivotal connection between the bolt and tractor, a rod extending through the depending portions of the side bars, links pivotally mounted on the adjacent ends of said rod and pivotally connected with the tractor, a movable frame including a perforated arcuate front portion mounted for turning movement between the guide flanges of

the annular frame and provided with downwardly extended depending portions, a scraper blade carried by said depending portions, a perforated brace secured to the inner face of the annular frame, a locking pin extending through the perforation in said brace and through the annular frame for engagement with a selected perforation in the movable frame for locking said movable frame in different positions of lateral adjustment, and means for raising and lowering the scraper assembly.

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